

**AGENDA**  
**25th Aging, Compatibility, and Stockpile Stewardship Conference**  
**held at Lawrence Livermore National Laboratory**  
**November 18-20, 2003**

<b>TUESDAY, November 18, 2003</b>			
8:00	<b>REGISTRATION</b> (Bldg 132, Lobby)		
8:30	<b>WELCOME</b> (Bldg 132, Rm 1000)		
8:45	<b>KEYNOTE ADDRESS</b> by Ed Moses on "The Role of NIF in Stockpile Stewardship" (Bldg 132, Rm 1000)		
9:30	<b>BREAK</b>		
<b>Session 1A - Plutonium Aging Mechanisms</b> (Moderators: Adam Schwartz and Luis Morales) (Bldg 132, Rm 1000)		<b>Session 1B - Polymers I</b> (Moderator: Todd Alam) (Bldg 132, Rm 1102)	
9:45	L. Morales (LANL), Plutonium Aging at LANL (U) [talk is SRD] (30 minutes)	10:00	D. A. Solyom, R. E. Cohenour, E. A. Eastwood, E. A. Nail, and B. Sung (KCP), and R. S. Maxwell (LLNL), DMA and DSC Applied to Aging Studies of Silicone-Based Polymers
10:15	A. Schwartz (LLNL), Plutonium Aging at LLNL (U) [talk is SRD] (30 minutes)	10:20	E. Clark (WSRC), Tritium Effects on Polymers
10:45	R. Mulford, A. Trujillo, and Wendell Brown (LANL), Density Changes with Age in Four Plutonium Alloys (U) [talk is CRD]	10:40	L. M. Thompson, E. L. Churnetski, J. D. Brown, and M. W. Moyer (Y-12), Property Evaluation of Polyetheretherketone
11:05	J. G. Tobin, K. T. Moore, M. A. Wall, A. J. Schwartz, B. W. Chung (LLNL), D. K. Shuh (LBNL), and R. K. Schultze (LANL), The Failure of Russell-Saunders Coupling in the Pu 5f States	11:00	L. N. Dinh, M. A. Schildbach, R. S. Maxwell, W. J. Siekhaus, B. Balazs, and W. McLean II (LLNL), H <sub>2</sub> O Outgassing from TR55
11:25	D. Kolman (LANL), The Aqueous Corrosion Behavior of Plutonium Metal Exposed to Nitric Acid Solutions	11:20	B. R. Cherry and T. M. Alam (SNL/NM), Utilization of Relaxation Nuclear Magnetic Resonance Imaging (R-NMRI) to Investigate Heterogeneous Polymer Aging
11:45	B. W. Chung, S. R. Thompson, C. H. Woods, D. J. Hopkins, W. H. Gourdin, and B. B. Ebbinghaus (LLNL), Density Changes in Plutonium Observed from Accelerated Aging Using Pu-238 Enrichment		
noon	<b>LUNCH</b>	noon	<b>LUNCH</b>
<b>Session 2A - Data Collection, Analysis, and Modeling of Subassemblies/Components I</b> (Moderator: Bill McLean) (Bldg 132, Rm 1000)		<b>Session 2B - High Explosives I</b> (Moderator: Sheldon Larson) (Bldg 132, Rm 1102)	
1:00	K. L. Schwartz and W. T. Quinlin (PX), High Explosive Recrystallization Modeling	1:00	P. D. Peterson, K-Y Lee, M. A. Fletcher, and S. A. Larson (LANL), Particle Characterization of Pressed PBX9501 Using Light Scattering and PLM Image Analysis
1:20	K. Balasubramanian, W. J. Siekhaus, and W. McLean II (LLNL), Computational Modeling of Uranium Corrosion and the Role of Impurities	1:20	S. J. Powell and L. R. Maez (LANL), Particle Size Distribution Study
1:40	L. Davenhall and A. M. Peters (LANL), An Overview of Pit Manufacturing Process Material Compatibility Evaluations	1:40	S. J. Powell (LANL), A Parametric Isostatic Pressing Study Using a Plastic-Bonded Explosive
2:10	H. Gregg and C. Harvey (LLNL), Micro-Compatibility Testing of Polysulfone	2:10	M. S. Campbell (LANL), Dynamic Mechanical Analysis of Plastic Bonded Explosives
2:45	<b>BREAK</b>	2:45	<b>BREAK</b>
3:00	Y.M.X.M. Dardenne and B. McLean (LLNL), Monte Carlo Simulations of an Energy Deposition into Gas and Metal (U) [talk is SRD]	3:00	D. J. Idar, J. T. Mang, J. W. Straight, P. Schafstall, A. H. Pacheco, R. DeLuca, M. A. Osborn, P. Chavez, and W. L. Coulter (LANL), X-0557 Modified Steven Tests: Series III and IV
3:20	R. A. Smith and J. H. Leckey (Y-12), Compatibility Units for LLNL Studies (U) [talk is SRD]	3:20	P. Peterson, D. Idar, and S. Larson (LANL), Microstructural Comparison of Virgin and Recycled 9502
3:40	J. Phillips (LANL), Introduction to Materials Compatibility Studies Performed for the B-61 Program (U) [talk is SRD]	3:40	T. D. Tran, D. M. Hoffman, and B. J. Cunningham (LLNL), Characterization of RM-03-AC, A Physical and Mechanical Mock for LX-17 and PBX-9502

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<b>WEDNESDAY - November 19, 2003</b>			
8:00	<b>Introductions, Housekeeping (Bill McLean/Bryan Balazs)</b> ( <i>Bldg 132, Rm 1000</i> )		
<b>Session 3A - High Explosives II</b> (Moderator: George Overturf) ( <i>Bldg 132, Rm 1000</i> )		<b>Session 3B - Ceramics</b> (Moderator: Marcus Schildbach) ( <i>Bldg 132, Rm 1102</i> )	
8:30	K. L. Schwartz and B. G. Russell (PX), Nondestructive Evaluation of Density Gradients in PBX-9502 and Voids in Adhesives Using High-Energy Neutrons, X-rays and Ultrasonics	8:30	L. L. Wang and B. Morton (LANL), Outgassing Study of a Crystalline Solid (U) [talk is SRD]
8:50	D. G. Thompson and R. DeLuca (LANL), Quasi-Static Tension and Compression of Pressed PBX 9501 After Accelerated Aging	8:50	L. N. Dinh, M. A. Schildbach, W. J. Siekhaus, and W. McLean II (LLNL), Outgassing in the LiD/LiOH System
9:10	B. Cunningham and H. Andreski (LLNL), Effects of Thermal Cycling on the Tensile Strength of PBX9502	9:10	C. W. Kee, S. E. McGhee, and R. B. Richmond (Y-12), Early ESBO Results (U) [talk is SRD]
9:30	D. Wroblewski, D. A. Langlois, E. B. Orlor, D. M. Dattelbaum, and J. H. Small (LANL), NMR of <sup>15</sup> N Labeled Analogs of Estane 5703 and BDNPA/F in Binder Aging Studies	9:30	M. Schildbach, L. Dinh, and W. McLean II (LLNL), Outgassing and Reactions of a Special Material (U) [talk is SRD]
10:00	<b>BREAK</b>	10:00	<b>BREAK</b>
10:15	G. Overturf, D. Schneberk, J. Kinney, and B. Weeks (LLNL), Application of X-ray Computed Tomography for Energetic Materials	10:15	N. R. Smyrl, J. E. Cline, G. L. Powell, and Q. G. Grindstaff (Y-12), FTIR and Mass Spectral Analysis of Reactions Related to a Special Material (U) [talk is SRD] <b>(30 minutes)</b>
10:35	T. Tran (LLNL), Studies of the Detonability of a Material (U) [talk is SRD]	10:45	J. E. Cline, N. R. Smyrl, and C. P. Boring (Y-12), Effects of Environmental Exposure on a Special Material (U) [talk is SRD] <b>(30 minutes)</b>
11:05	W. Rodin and B. G. Russell (PX), Examination of Branching Reactions in Poly(ester-urethane) via SEC and MALS		
11:25	D. Schneberk (LLNL), DR/CT of Weapons Components and Assemblies		
noon	<b>LUNCH</b>	noon	<b>LUNCH</b>
<b>Session 4 - Uranium</b> (Moderator: Bryan Balazs) ( <i>Bldg 132, Rm 1000</i> )			
1:00	K. Lao and D. Teter (LANL), Measurement of Hydrogen in U-6wt%Nb Using an Optimized Inert Gas Fusion Method		
1:30	J. L. Cochran and J. L. Pugh (Y-12), An X-ray Fluorescence Gauge for the Measurement of the Composition of Binary		
2:00	W. Siekhaus (LLNL), Composition of Uranium Oxide Layers on Uranium Analyzed with um Spatial Resolution by Raman Spectroscopy		
2:30	<b>BREAK</b>		
<b>GENERAL DISCUSSIONS from 3:00 to 5:00</b> (Moderator: Dick Alire) ( <i>Bldg 132, Rm 1000</i> )			
<b>CONFERENCE DINNER at 6:00 in the West Cafeteria</b>			

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<b>THURSDAY - November 20, 2003</b>			
8:00	<b>Introductions, Housekeeping (Bill McLean/Bryan Balazs)</b> ( <i>Bldg 132, Rm 1000</i> )		
<b>Session 5A - Data Collection, Analysis, and Modeling of Subassemblies/Components II</b> (Moderator: John Kirkpatrick) ( <i>Bldg 132, Rm 1000</i> )		<b>Session 5B - Metal Aging Effects</b> (Moderator: Wigbert Siekhaus) ( <i>Bldg 132, Rm 1102</i> )	
8:30	M. Havstad (LLNL), Heat Transfer and Mesh Regression During Hydriding Simulations (U) [talk is SRD]	8:30	J. Brunk (KCP), Testing 304 Stainless Steel Tubing for Work Hardening Due to Repeated Bending and Straightening
8:50	R. Tandon, J. S. Glass, and A. C. Hall (SNL/NM), Fragmentation Enabled Weaklink Utilizing a Self-Stressed System	8:50	M. J. Morgan and K. J. Imrich (WSRC), Electric-Discharge-Machining Techniques for Evaluating Tritium Effects on Materials
9:10	W. Moffatt, R. L. Bierbaum, and D. L. Wright (SNL/NM), Aging Mechanisms Being Tracked in the Enduring Stockpile (U) [talk is SRD]	9:10	M. Pechersky and E. G. Estochen (WSRC), Nondestructive Determination of Residual Stress in Tritium Reservoirs
9:30	R. J. Hanrahan, Jr., G. T. Medford, D. N. Robinson, and R. H. Krabill (LANL), Analysis of W78 CSA Gas Atmospheres (U) [talk is SRD]	9:30	L. Summers (LLNL), Fatigue Failure in Stainless Steel Tubes
10:00	<b>BREAK</b>	10:00	<b>BREAK</b>
10:15	V. Newman (Y-12), CSA Surveillance Anomalies (U) [talk is SRD]	10:15	R. Mulford (LANL) and R. J. Asaro (UCSD), Mechanical Properties of Metals Measured by Micro-Indentation
10:35	B. McLean (LLNL), Estimates of Gas Loss in Sealed Systems: Statistics vs. Chemical Intuition (U) [talk is SRD] <b>(30 minutes)</b>	10:35	W. Siekhaus (LLNL), The Reaction Kinetics of Indium with Gold Wires of 100 $\mu\text{m}$ Diameter in Solder-Mounds
11:05	J. R. Kirkpatrick (OR), Evaluation and Modification of LLNL Aging Model and Application to LLNL (U) [talk is SRD] <b>(30 minutes)</b>	11:00	L. Summers, Special Metallography Studies (U) (LLNL) [talk is SRD]
11:35	D. Stinemat, A. Rutherford, and D. J. Luscher (LANL), Modeling the Effects of Aging on Mechanical Response of W76 (U) [talk is SRD]	11:20	S. Thornberg (SNL/NM), Aging Studies for Radar Tubes (U) [talk is SRD]
noon	<b>LUNCH</b>	noon	<b>LUNCH</b>
Thursday afternoon sessions on next page			

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<b>THURSDAY - November 20, 2003 (continued)</b>			
<b>Session 6A - Advanced Diagnostics and Analytical Techniques</b> <b>(Moderator: David Tallant)</b> <i>(Bldg 132, Rm 1000)</i>		<b>Session 6B - Polymers II</b> <b>(Moderator: Robert Maxwell)</b> <i>(Bldg 132, Rm 1102)</i>	
1:00	B. Parker, C. Watterson, B. Morick, P. Klingsporn, D. Stoltz, and D. Smith (KCP), Fiber Optic Hydrogen Measurements	1:00	R. Bernstein, D. K. Derzon, and K. T. Gillen (SNL/NM), Parachute Materials Study: Kevlar Degradation
1:20	L. L. Wang and B. Morton (LANL), Quantitative Gas Analysis of Small Batch Samples	1:20	E. Russick and M. E. Stavig (SNL/NM), Thermal and Radiation Aging of Removable Epoxy Foams: Two-Year Aging Data
1:40	D. Tallant, R. Bernstein, M. J. Cich, M. J. Garcia, M. J. Hafich, M. S. Kent, and R. L. Simpson (SNL/NM), Multivariate Analysis of Vibrational Spectra Applied to Materials Processing, Aging, and Discrimination	1:40	G. L. Powell (Y-12), The Hydriding Kinetics of Organic Hydrogen Getters III <b>(30 minutes)</b>
2:00	S. Maharrey, B. Bastasz, R. Behrens, A. Highley, G. Kruppa, and J. Whaley (SNL/CA), High Resolution Mass Spectrometry for Determination of the Physicochemical Processing Controlling the Aging Behavior of Complex Materials	2:10	S. C. Chinn, B. Balazs, and R. S. Maxwell (LLNL), Solid-State NMR Measurements for Preliminary Lifetime Assessments in gamma-Irradiated Thermoplastics, Fluoropolymers, and Siloxane Elastomers
2:20	S. Sickafoose and B. Mills (SNL/CA), SmartValve: <i>in situ</i> Spectroscopic Surveillance for Monitoring of Transient Species Within Weapon Atmospheres	2:30	W. Rodin, B. R. Richardson, and M. G. McCarty (PX) and Vincent Loyola (SNL/NM), Accelerated Aging Effects in SNL Isolator Components
2:50	<b>BREAK</b>	2:50	<b>BREAK</b>
3:10	J. Hall, B. Rusnak, and S. Chen (LLNL), High-Energy Neutron Imaging of CSAs (U) [talk is SRD]		
3:30	G. L. Powell, R. L. Cox, and D. Boyer (Y-12), New DRIFT Applications (U) [talk is SRD] <b>(30 minutes)</b>		
4:00	G. L. Powell (Y-12), Uranium Oxide Film Measurement Using Grazing Angle Specular Reflectance FTIR <b>(30 minutes)</b>		